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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,975	12/08/2005	Richard E. Duren	2003UR029	9586

7590 03/30/2009  
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EXAMINER
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HUYNH, PHUONG

ART UNIT	PAPER NUMBER
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2857

MAIL DATE	DELIVERY MODE
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03/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/560,975	<b>Applicant(s)</b> DUREN ET AL.	
	<b>Examiner</b> PHUONG HUYNH	<b>Art Unit</b> 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/08/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 recites "a method for use in seismic data processing to control the wavelet phase spectrum of seismic data collected using a seismic source with a known signature wavelet and at least one receiver, said method comprising steps of using the source signature to design a first phase-control filter...., applying the first phase-control filter...., and performing all subsequent processing steps on the phase-controlled seismic data" [see claim 1], which is not tied to another statutory class/machine and which does not transform a particular article to a different state or thing. Therefore, the claimed invention is directed to non-statutory subject matter (see *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008)).

Claims 2-5 depend from rejected claim 1 and therefore are also rejected.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “a method for use in seismic data processing to control the wavelet phase spectrum of seismic data collected using a seismic source with a known signature wavelet and at least one receiver, said method comprising steps of using the source signature to design a first phase-control filter to limit wavelet phase spectrum consistent **with assumptions inherent in at least one subsequent processing step, having first processed the source signature with any processing steps previously applied to the seismic data**” [see claim 1, lines 1-8]” which renders the claim indefinite because it is hard to ascertain what assumptions that are inherent in at least one subsequent processing step; and that it is unclear of which processing step as recited in “having first processed the source signature with any processing steps previously applied to the seismic data”.

Further, in claim 1 at steps (b) and (c), it is unclear to ascertain which processing step that is in the recited limitation “applying the first phase-control filter to the seismic data before said subsequent processing steps” and “performing all subsequent processing steps on the phase-controlled seismic data”.

Claims 2-5 depend from rejected claim1 and therefore are also rejected.

Similarly, in claim 3, it is unclear to ascertain which subsequent processing that is in the limitation "said subsequent process" that "concludes with a second phase-control filtering of the seismic data" [see claim 3, lines 1-2] and in "the processing the filtered source signature with said all subsequent processing steps up to the second phase-control filtering" [see claim 3, lines 5-6]. Further it is unclear of which "step" in "said second phase control filter being designed in steps comprising applying the first phase-control filter...."[see claim 3, lines 3-4].

Further, in claim 3, the limitation "a second phase-control filter" at line 7 is unclear of whether it refers to the limitation " a second phase-control filter" at line 2.

Regarding claim 5, it is unclear to ascertain which subsequent processing that is in the limitation "wherein said at least one subsequent processing step comprises the steps of receiver-consistent deconvolution and predictive deconvolution".

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 5 are, as best understood, rejected under 35 U.S.C. 102(b) as being anticipated by Martinez et al. (hereinafter “Martinez”) (USPN. 4,646,274).

Regarding claim 1, Martinez discloses a method for use in seismic data processing to control the wavelet phase spectrum of seismic data collected using a seismic source with a known signature wavelet and at least one receiver, said method comprising the steps of:

(a) using the source signature [signals from accelerometers: col. 2, lines 48-56] to design a first phase-control filter to limit wavelet phase spectrum consistent with assumptions inherent in at least one subsequent processing step, having first processed the source signature with any processing steps previously applied to the seismic data [see Martinez: col. 2, line 55-col. 3, line 16] ;

(b) applying the first phase-control filter to the seismic data before said subsequent processing steps [see Martinez: col. 3, lines 17-38]; and

(c) performing all subsequent processing steps on the phase-controlled seismic data [see Martinez: col. 3, lines 38-56].

Regarding claim 2, Martinez discloses that wherein the first phase-control filter shapes the source signature to minimum phase [Martinez: col. 3, line 66-col. 4, line 19].

Regarding claim 5, Martinez discloses that said at least one subsequent processing step comprises the steps of receiver-consistent deconvolution [see Martinez: col. 3, lines 30-41] and predictive deconvolution [see Martinez: col. 3, line 65-col. 4, lines 19].

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUONG HUYNH whose telephone number is (571)272-2718. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on 571-272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2857

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. H./

/Hal D Wachsman/  
Primary Examiner, Art Unit 2857

Examiner, Art Unit 2857  
March 18, 2009